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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,190	12/12/2003	Sung-Koog Oh	5000-1-406	2584
33942	7590	08/08/2006	EXAMINER	
CHA & REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652			ROJAS, OMAR R	
			ART UNIT	PAPER NUMBER.
			2874	

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/735,190

Applicant(s)

OH ET AL.

Examiner

Omar Rojas

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-5 is/are rejected.
7) ☒ Claim(s) 6 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: Detailed Action.

DETAILED ACTION

This Office action is in response to the Notice of Withdrawal from Issue Under 37 C.F.R. 1.313 mailed on July 27, 2006. The Notice of Allowability mailed on June 26, 2006 has been vacated and a new Office action on the merits is issued forthwith.

Response to Amendment

1. With regards to the amendment filed on May 1, 2006, all the requested changes to the claims and specification have been entered. Claims 1-6 are pending.

Response to Arguments

2. Applicant's arguments filed May 1, 2006 (see pages 6-8 of the Remarks) with respect to the Furukawa reference have been fully considered but they are not persuasive. The WPI/Derwent abstract included with the Furukawa reference (see Document AB filed 02/18/2005 of the application) discloses a zero dispersion slope greater than $0.07 \text{ ps/nm}^2 \cdot \text{km}$ which overlaps the range of claim 1. Furthermore, column 5, lines 2-4 of Furukawa also suggests a zero dispersion slope greater than $0.07 \text{ ps/nm}^2 \cdot \text{km}$ which overlaps the range of claim 1. Therefore, Applicant's arguments concerning the Furukawa reference are not deemed persuasive.

3. Claims 1-5 have been further rejected based upon newly cited prior art. See the detailed remarks below.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2874

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 2002-258092 to Furukawa (hereinafter “Furukawa”), cited in a prior Office action

A machine translation of the Furukawa reference (hereinafter “the translation”) has been provided and is referred to below.

In re claim 1, Furukawa teaches an optical fiber having a refractive profile (e.g., see Figure 1) comprising:

a core area 6 extended along a predetermined reference axis;

a cladding area 5 formed around the external circumference of the core area, wherein the radii of the core area and cladding area and the refractive profile are selectively selected so that the optical fiber has the following characteristics:

a zero dispersion wavelength in the range of 1300 to 1350 nm (see Furukawa, Table 1 on page 5);

a dispersion value in the range of 13 to 18 ps/nm*km at 1550 nm wavelength (see Furukawa, Table 1 on page 5);

a zero dispersion slope greater than 0.7 ps/nm²*km (see the translation at paragraph [0011]; see also the WPI/Derwent English abstract of the Furukawa reference, submitted by applicant(s)); and,

an effective cross-section area of 70 microns or more (see Furukawa, Table 1 on page 5).

Art Unit: 2874

In re claims 2 and 3, Figures 5 and 9 of Furukawa clearly suggest the recited limitations.

In re claims 4 and 5, the optical fiber of Furukawa may be considered either a depressed clad type optical fiber or an index matched type optical fiber in the broadest sense of those terms.

6. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,434,310

B1 to Liu et al. ("Liu").

In re claim 1, Liu teaches an optical fiber having a refractive profile (e.g., see Figure 2) comprising:

a core area 20 extended along a predetermined reference axis;

a cladding area 22 formed around the external circumference of the core area, wherein the radii of the core area and cladding area and the refractive profile are selectively selected so that the optical fiber has the following characteristics:

a zero dispersion wavelength of 1306 nm (see Table 2 at column 6);

a dispersion value in the range of 11 to 14 ps/nm*km at 1550 nm wavelength (see col. 2, lines 36-42); and,

an effective cross-section area of 70 microns or more (see Table 2).

A zero dispersion slope within the range of 0.046 to 0.079 ps/nm²*km is considered inherently present in Liu because Liu does expressly disclose a dispersion slope of 0.057 ps/nm²*km in Table 2 and the optical fiber of Liu is identical in structure to that of claim 1. Table 2 of Liu is reproduced below.

TABLE 2

3	Zero-dispersion wavelength (nm)	1306
	Dispersion slope (ps/nm ² -km)	0.057
	Mode field diameter (μm)	9.55
	Effective area (μm ²)	71.8
	Cable cutoff wavelength (nm)	1178
	Pin array bending loss (dB)	7.64
5	Attenuation (dB/km)	0.206

In re claims 2 and 3, the recited limitations are also considered inherently present in Liu because the physical structure of Liu's optical fiber is essentially the same to that claimed.

In re claims 4 and 5, the optical fiber of Liu may be considered either a depressed clad type optical fiber or an index matched type optical fiber in the broadest sense of those terms.

7. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,466,721 B1 to Tsukitani et al. ("Tsukitani").

In re claim 1, Tsukitani teaches an optical fiber 11 having a refractive profile comprising:

a core area extended along a predetermined reference axis (col. 5, lines 63-67);

a cladding area formed around the external circumference of the core area (col. 5, lines 63-67), wherein the radii of the core area and cladding area and the refractive profile are selectively selected so that the optical fiber has the following characteristics:

a zero dispersion wavelength between 1250 to 1350 nm (see col. 5, lines 25-27);

a dispersion value in the range of 17 to 19 ps/nm*km at 1550 nm wavelength (see col. 5, lines 61-64); and,

Art Unit: 2874

an effective cross-section area of 100 microns or more (see col. 6, lines 15-17).

A zero dispersion slope within the range of 0.046 to 0.079 ps/nm²*km is considered inherently present in Tsukitani because Tsukitani does expressly disclose a dispersion slope of 0.05 to 0.06 ps/nm²*km at col. 5, lines 61-64 and the optical fiber of Tsukitani is identical in structure to that of claim 1.

In re claims 2 and 3, the recited limitations are also considered inherently present in Tsukitani because the physical structure of Tsukitani's optical fiber is essentially the same to that claimed.

In re claims 4 and 5, the optical fiber of Tsukitani may be considered either a depressed clad type optical fiber or an index matched type optical fiber in the broadest sense of those terms.

Allowable Subject Matter

8. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 6, none of the applied references, either alone or in combination(s), suggest a core radius of 4.45 to 4.5 microns with a cladding radius of 10 to 10.3 microns. The Liu reference, for example, only teaches a core radius less than 4 microns as seen in Tables 3 and 6.

Art Unit: 2874

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (12:00PM-8:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas
Patent Examiner
Art Unit 2874

or
August 1, 2006



Rodney Bovernick
Supervisory Patent Examiner
Technology Center 2800